From: [redacted]
To: Fleming, Sheila; Filippini, Mark; Ogle, Kimberly
Cc: Maxwell, Grady; [redacted] ; [redacted]
Subject: RE: Park Place Drinking Water Update - July 11, 2014
Date: Tuesday, July 15, 2014 4:19:34 PM

The Lead and Copper Rule (LCR) requires public water systems to collect lead and copper tap samples at a specified number of single family dwellings. (The number of tap samples, which can be collected from either a kitchen or bathroom tap, is dependent on the number of people served by the public water system.) Water systems serving 50,000 people or less are only required to install optimal corrosion control treatment if the lead and/or copper action level has been exceeded. The LCR, which was published in 1991, required all large water system, such as Seattle Public Utilities (SPU) to provide optimal corrosion control treatment even if they did not exceed the lead or copper action level. SPU optimized their corrosion control treatment back in the 1990's.

As Mark Filippini mentioned in his email, SPU is responsible only up to where the water connects to the building. This is true for all water systems since a water system has no control over a building's plumbing materials and how the plumbing is installed. As long as a water system provides water that is minimally corrosive, they are in compliance with the LCR. (Actually a water system may have some responsibility over the service line, i.e., the pipe that connects the water main in the street to the meter, but since there are no lead service lines in Seattle, or in any of the Region 10 states, this is not something that needs to be addressed here.)

The Park Place Building was built in the 1970's. At that time the solder that was typically used to join copper pipes was lead solder. Particulate lead solder may be the source of the lead in the drinking fountains. Lead solder was banned nationally in 1988. Seattle was more progressive and banned lead solder a few years before that.

As I mentioned in the first paragraph of this email, the LCR requires lead and copper samples to be collected at "single family dwellings". This is because when writing the LCR, EPA knew that collecting lead and copper tap samples from large buildings could yield misleading results, as the plumbing in large buildings is very complex and can provide extremely variable results, as can be seen by the results from our own building.

I hope this information is helpful. If anyone has any questions, please feel free to contact me.

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(b) (6)(b) (6) - Environmental Scientist
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From: Fleming, Sheila
Sent: Tuesday, July 15, 2014 11:03 AM
To: Filippini, Mark; Ogle, Kimberly
Cc: Maxwell, Grady; (b) (6); (b) (6)(b) (6); (b) (6)(b) (6)
Subject: RE: Park Place Drinking Water Update - July 11, 2014

Hi (b) (6)(b) (6),

We shared the drinking water data with King County and Washington State Departments of Health. There is a trigger for public water systems when there is a certain frequency of lead exceedances at the tap, but the utility did not conduct this sampling so I don't think the water utility needs to take any action. (b) (6)(b) (6) is our expert on the lead and copper rule and I suggest you talk to her if you have questions about the rule. The water coming into the Park Place building was below the action levels.

Please let me know if you have any other questions.

Sheila

Sheila Fleming, PE
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From: Filippini, Mark
Sent: Tuesday, July 15, 2014 10:18 AM
To: Ogle, Kimberly
Cc: Maxwell, Grady; (b) (6); (b) (6)(b) (6); Fleming, Sheila
Subject: RE: Park Place Drinking Water Update - July 11, 2014

I am copying Sheila on this. Her staff has been in touch with Seattle/King County Public Health. I believe the city (SPU) is responsible only up to where the water connects to the building. But Sheila may have a better perspective.

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Mark Filippini, Manager
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From: Ogle, Kimberly
Sent: Tuesday, July 15, 2014 9:21 AM
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To: Filippini, Mark
Cc: Maxwell, Grady; (b) (6) ; (b) (6)(b) (6)
Subject: FW: Park Place Drinking Water Update - July 11, 2014
Fyi. Do you have an answer for this question?

From: (b) (6)
Sent: Tuesday, July 15, 2014 9:00 AM
To: Kelly, Joyce
Cc: Ogle, Kimberly; (b) (6)(b) (6)
Subject: RE: Park Place Drinking Water Update - July 11, 2014
Joyce,
As a former drinking water person....I was wondering if anyone is looking into the quality of the water in the other high rise buildings downtown. I know the city of Seattle is ultimately responsible for the Lead Copper Rule but somehow they missed the Park Place building. If we weren't diligent in testing water quality in our office (my former office, I am in (b) (6)(b) (6) now) we would have assumed that the drinking water was below the action limits.
Do you know if someone has let the City of Seattle know about this?
Thanks

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Region 10, Environmental Protection Agency
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From: Kelly, Joyce
Sent: Friday, July 11, 2014 9:18 AM
To: R10-EPA Regional Mail Group; R10-Contractors
Subject: Park Place Drinking Water Update - July 11, 2014

Updates Included in this Message:

- Additional signs were posted at drinking water fountains and faucets.
- Information about EPA action levels and exposure to lead and copper.
- Schedule for the latest drinking water sampling results.
- Federal Occupational Health (FOH) blood lead and copper testing next steps.

We have posted signs at drinking water fountains and faucets on floors 16, 17, 20, and 21.

On Monday July 7, 2014, signs were posted at drinking water fountains and faucets on floors 16, 17, 20 and 21 in the Park Place building. We posted signs at fixtures for which we have lead results below the action level, but are awaiting copper results from our July 3 sampling. On all other EPA occupied floors, if the water exceeded the action level for lead or copper, then the drinking fountain has either been disconnected or a "do not drink" sign is posted.
Filtered drinking water is available from:

- Drinking fountains on the 20th floor, the 1st floor lobby, and in the Fitness Center.
- Refrigerator water dispensers on the 20th and 21st floors.

The filters in the new drinking water fountains use a combination of a pre-filter mesh to remove particulates, and activated carbon and ion exchange to remove contaminants, including lead and copper.

Fixtures which have been tested for lead and copper and were found to be below the action levels include:

- All kitchen sinks on floors 7, 8, 9, 10, 11, 12, 13 and 18.
- Un-posted drinking water fountains on floors 7, 8, 9, 11, 12, and 13.

Washington Holdings (the landlord) has provided bottled water dispensers on the 10th and 18th floors because water fountains on these floors exceeded the action level for lead and/or copper. Washington Holdings has also agreed to provide bottled water dispensers for the 16th, 17th, and 21st floors while we are waiting for copper results from the laboratory. The water dispensers should be placed on those floors within the next several days. Lead testing has already been conducted on the floors 16, 17 and 21 and lead levels were below the action level.

We are awaiting sampling results for lead and copper on all hot water dispensers so please **do not drink water from the hot water dispensers** until further notice.

Information on Lead

The Safe Drinking Water Act requires EPA to determine the level of contaminants in drinking water at which no adverse health effects are likely to occur with an adequate margin of safety. These non-enforceable health goals, based solely on health risks are called maximum contaminant level goals (MCLGs). The MCLG for lead is zero. EPA has set this level based on the best available science which shows there is no safe level of exposure to lead. The National Primary Drinking Water Regulations' action level of 15 µg/L for lead is not a health-based standard, but rather a technology based standard that triggers certain follow-up activities for public water systems.

Information on Copper

Copper is an essential nutrient which is regulated by the body for most individuals. However, exposure to copper can cause short-term gastro-intestinal distress and long-term liver and kidney disease. The EPA MCLG (and action level) for copper is 1,300 µg/L. Copper toxicity is extremely rare for people who do not suffer from Wilson disease. The Institute of Medicine, the health arm of the National Academy of Sciences, has established a **Tolerable Upper Intake Level,** for copper of 10,000 µg/day (Institute of Medicine 2001). This level is safe for adults, including pregnant women and nursing mothers, and is defined as:

> ***"The highest level of daily nutrient intake that is likely to pose no risk of adverse health effects for almost all individuals."***

People with Wilson disease, a congenital impairment of copper metabolism, are especially susceptible to copper toxicity and account for the exception to "almost all individuals".

Based on the information from the Institute of Medicine, EPA Region 10 toxicologists believe

that the likelihood of adverse health effects from copper from drinking water in the Park Place building is low because:

- The safe level for copper is 10,000 µg/day.
- A person in the upper 95th percentile (those with the highest copper intake) of the United States has a copper intake of 4,240 µg/day from other sources (drinking water, diet, and supplements) see Appendix Table C-16 from (Institute of Medicine 2001).
- Even at this upper 95th percentile level, a person could consume an additional 5,760 µg/day (10,000 µg/day – 4,240 µg/day = 5,760 µg/day) and remain at the safe level of 10,000 µg/day.
- The highest copper concentration detected in the Park Place building to date (the first draw sample collected from the 13th floor north drinking fountain) was 5,130 µg/L. Because the highest concentration was the first draw sample, it is unlikely that you could draw a liter of water at this concentration. The copper concentration in the second draw from this fountain was 3,260 µg/L.
- At the highest copper concentration detected, you could drink 1.1 liters per day and not exceed the safe level 10,000 µg/day.

Schedule for latest drinking water sampling results.

EPA sampling teams completed additional sampling on July 3, 2014. Locations sampled included:

- Refrigerators, sinks and/or drinking fountains on floors 5, 16, 17, 20, 21, the Fitness Center, PERC, and the 1st floor lobby.
- Hot water dispensers on floors 5, 7, 8, 9, 10, 11, 12, 13 and 18.

Laboratory results will be available in approximately two weeks. We will include a summary of the results in a future email update and post the laboratory results on the InfoPage as soon as they are available.

FOH blood lead and copper testing next steps:

Many employees have signed up to have their blood lead and copper levels tested at Federal Occupational Health (FOH) Services. FOH has indicated that it will take up to about ten days for employees to receive their test results. When employees have received their results, we plan to invite a health professional to the Seattle office to provide information and answer questions. If you would like to have your blood tested or have any questions please contact Grady Maxwell at 206-553-0241 or Maxwell.grady@epa.gov or Mark Filippini at 206-553-6327 or Filippini.mark@epa.gov.

References:

Institute of Medicine (2001). Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc. Washington, DC, Standing Committee on the Scientific Evaluation of Dietary Reference Intakes, Panel on Micronutrients, Food and Nutrition Board, Institute of Medicine**:**

xxii 800.
Joyce

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Joyce C. Kelly, Director
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